

Recovery Plan Action Status

Plan Name: Recovery Plan for *Hibiscadelphus distans*

Plan Status: Final

Plan Date: 05-Jun-96

Lead Agency: USFWS

Lead Office: Pacific Islands Fish And Wildlife Office

(408)

(792-9400)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (<i>Hibiscadelphus distans</i>)	1	1111	Maintain exclosures	Ongoing Not Current	Prior to FY 1995		Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	HIDFor maintained the fence at the lower Koaie Canyon site. The first fenced site still needs to be surveyed for a potential seed bank and assessed for potential restoration purposes.
Kauai hau kuahiwi (<i>Hibiscadelphus distans</i>)	1	1112	Improve methods and control feral goats	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	Studies on the control of feral ungulates have been conducted for numerous other areas, and the results of these studies are used to determine the best method of ungulate control in <i>Hibiscadelphus distans</i> habitat. Currently, hunting is the only method of control in the general area.
Kauai hau kuahiwi (<i>Hibiscadelphus distans</i>)	1	112	Control erosion and landslides	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Effective methods of erosion control in steep, forested habitats have not yet been developed. The removal of goats in the general vicinity would reduce the level of erosion as the goats tend to eat all plants in the area and expose bare soil.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (Hibiscadelphus distans)	1	113	Improve methods and control alien plants	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Competition, Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	Numerous studies on the control of various alien plants have been or are being conducted by the Invasive Species Committees and land managers on each of the islands, and the results of these studies are used to determine the best method of weed control in Hibiscadelphus distans habitat.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	114	Improve methods and control insect predators	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	Beetles and grasshoppers are threat to the Koaie Canyon population, but efficient and effective control methods are not yet available for use in natural settings.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	115	Develop and implement disease monitoring protocol	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Disease	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This was not identified as an immediate threat by the Kauai GSN committee, and therefore research on control methods is not being pursued at this time.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	116	Control and minimize human disturbance	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Other	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	This task has been abandoned since the only population threatened by trampling from hikers is now extirpated.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (Hibiscadelphus distans)	1	12	Conduct surveys	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Research: Population Surveys	Internal Technical Assistance, Species Expert	Surveys in historical range and other suitable habitat have been occurring, and have resulted in the location of one additional population in Hipalau Valley. Additional habitat still remains to be surveyed.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	13	Protect and manage new populations	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Acquisition: Management Agreement, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	
Kauai hau kuahiwi (Hibiscadelphus distans)	1	21	Evaluate genetic diversity and select stock for augmenting/establishing	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Research: Genetics, Research: Propagation, Research: Reintroduction	Contract, Graduate Student, Species Expert	While the genetic diversity of the species has not been studied, the reduction of the species to 20 individuals total in 2005 make every individual vital to the reintroduction efforts for the species.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	22	Determine appropriate introduction techniques	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Research: Propagation, Research: Reintroduction	Contract, Graduate Student, Species Expert	HIDFor has developed a successful method of propagation and reintroduction for this species.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	23	Propagate seedlings for outplanting	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Propagation, Management: Reintroduction	Contract, Internal Technical Assistance, Volunteer	National Tropical Botanical Garden and HIDFor have many seeds in storage and continue to propagate material for outplanting efforts.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (Hibiscadelphus distans)	1	24	Augment existing populations	Obsolete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	The existing wild individuals occur in extremely steep habitat, and therefore augmentation at these sites is too difficult.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	25	Locate habitat for two additional populations	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Acquisition: Management Agreement	Internal Administrative, Internal Field Assistance, Species Expert	In the late 1980's HIFor constructed two 0.25 acre exclosures at Kahoaloha and Kaulaula Valley for reintroductions.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	26	Protect and manage new sites	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Acquisition: Management Agreement, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance	In the late 1980's HIFor constructed two 0.25 acre exclosures at Kahoaloha and Kaulaula Valley. These exclosures are not large enough for a viable population long-term, and need to be expanded. Alien plant control is an ongoing task.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	27	Establish new populations through outplanting	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, National Tropical Botanical Garden, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	This task is ongoing, but the reintroduced populations are not yet reproducing and stable.
Kauai hau kuahiwi (Hibiscadelphus distans)	1	28	Control threats to the new populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	The ungulates have been fenced out, and alien plant control is ongoing.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (Hibiscadelphus distans)	2	31	Investigate the ecology of Hibiscadelphus distans	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Competition, Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys, Research: Reintroduction	Contract, Graduate Student, Species Expert	This task is occurring to some degree as experts monitor the wild populations and as HIDFor monitors the outplanted populations and learn from their observations. Additional experimental research would be beneficial to determine the detailed environmental needs of the species.
Kauai hau kuahiwi (Hibiscadelphus distans)	2	32	Determine the effects of introduced birds	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance	This was not identified as a threat by the Kauai Genetic Safety Net committee, and therefore research on its impacts has not been pursued.
Kauai hau kuahiwi (Hibiscadelphus distans)	2	41	Map, tag, and monitor all wild plants	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	Monitoring should occur more frequently than it is currently - at least once a year.
Kauai hau kuahiwi (Hibiscadelphus distans)	2	42	Map, tag and monitor all transplants	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Research: Population Surveys	Contract, Internal Field Assistance, Species Expert	Monitoring is not occurring as frequently as it should be - at least once a year.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai hau kuahiwi (Hibiscadelphus distans)	3	51	Determine number of populations and individuals needed for survival	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Planning, Other: Regulations, Research: Demographic Studies, Research: Genetics, Research: Habitat Status, Research: Management Techniques, Research: Reintroduction	Contract, Internal Technical Assistance, Species Expert	
Kauai hau kuahiwi (Hibiscadelphus distans)	3	52	Revise recovery objectives if necessary	Ongoing Current	FY 2010		U.S. Fish and Wildlife Service, Ecological Services Division, Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources	Other: Regulations, Research: Competition, Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	This task has been initiated with the development of the Kauai island-wide recovery plan which includes the revision of all listed endemic plants on Kauai.